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STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

INTER-OFFICE CORRESPONDENCE

ATE: July 20, 1971

EMO TO: Division of Legal Services

ROM: Division of Land Pollution Control

UBJECT: ST. CLAIR COUNTY - Land Pollution Control
Sauget/Sauget and Company

Please refer to the Pollution Control Board ruling regarding case No. PCB 71-29 concerning the subject refuse disposal site.

The information submitted by Monsanto Corporation in response to the ruling has been reviewed by this Division. This information consisted of a copy of a letter to this Agency's predecessor dated 16 August 1968. Their transmittal letter indicated a 48 percent reduction in volume of chemical waste since 1968. No mention of mercury was made. However, a copy of Monsanto's Federal Mercury Waste Inventory of 1970 in Division of Water Pollution Control's files indicates that they are disposing of mercury at this site. On face value, by their own admission in the cover letter, tests from one or more of their test wells indicates that the phenol content of the water has doubled from 1.0 to 2.0 ppm in some period to April 27, 1971. The effluent standards have a phenol limit of 0.2 ppm. Thus it must be assumed that the waste discharge has caused a contamination of the ground water to a point ten times greater than would be allowed in a waste effluent to a stream.

Based upon this and other vague information which we were able to obtain prior to this time, a "paper" investigation has been made, the results of which point to unbelievably gross ground water pollution of one of, if not the most heavily pumped aquifer in the State. The information upon which this conclusion is based is as follows:

A study of the files in the Division of Water Pollution Control indicates that this liquid waste disposal site has been in operation since sometime before 1968. Simply put, from 3.5 to 7 million gallons of exceptionally high strength liquid waste have been dumped each year into a pile of cinders resting upon pervious alluvium, directly connected with the ground water (aquifer). Apparently, due to some questions of ground water pollution, the Sanitary Water Board required that test wells be put in in 1968. The locations of the wells are shown in the Division of Water Pollution Control files, but no other information is included, even depth. Only one set of inconclusive samples appear to have ever been collected by the Illinois Department of Public Health (in 1968) and no information regarding additional sampling by Monsanto was found. Information regarding these wells was requested at the time of referral of this case, but information was withheld from this Division.

The installer of the test wells has been located, and some information obtained. The wells were installed by Layne Western and that company indicates that they are screened at depths of 77 to 90 feet. Since the water table (top of the zone saturation) is estimated to be between 12 and 20 feet with considerable fluctuation, the very gross pollution (leachate) from the disposal site would remain in the upper part of the saturated zone, the monitor wells, screened near the bottom of the aquifer, could sample only slightly contaminated water. Thus, even though polluted, the test wells are not believed to be indicative of the actual conditions in the shallow depths. It is further noted that the Monsanto Corporation also has a very high capacity, Ranney type well located nearby. No recent tests were included from this well, which is believed to be more heavily polluted than the test wells. It is also known to be causing a considerable draw-down (zone of depression) of the water table in the entire area in question, although it is doubtful that it would be indicative of the presumed gross pollution owing to dilution by the large amount of water induced from the river, and to the tendency of the polluted materials to stratify and remain above the intake lines of the well. A cross-sectional sketch based upon the actual installation and the aforementioned assumptions is attached.

It is further noted that information received from the Illinois State Water Survey indicates that Monsanto also has at least two other high capacity Ranney collector wells located Northeast of the subject disposal site. These were shown in the past to create a considerable cone-of-depression which may account for the increasing phenol content in test well No. 1, which was admitted by the Company. It is also noted that our information indicates that at least one of these wells had to be taken out of service due to excessive pollution.

Inasmuch as the aquifer in question, known as "The Great American Bottom", is one of the most prolific and heavily pumped in the State, it is believed strongly that action must be taken now. We have not attempted to make an on-site investigation or sample the test wells, since the results would still be inconclusive in our opinion. Any meaningful investigation will require additional monitoring wells installed at such a depth that samples can be collected near the top of the zone of saturation. The actual locations and depths will depend upon the actual conditions found during drilling. It is estimated that the foregoing assumptions can be proven with as few as 5 or 6 relatively shallow (less than 25 feet deep) test wells. However, there is a high probability approaching certainty that Monsanto's water records would be sufficient evidence for conviction of willful and gross ground water pollution.

In view of the foregoing, it is recommended that the Pollution Control Board be petitioned by this Agency to require Monsanto Corporation, or Sauget and Company to produce all water records and to arrange for the installation of the proposed new test wells. All drilling and sampling should be done in the presence of a ground water geologist, either from this Agency or from the State Geological Survey, and samples should be run by the Division of Laboratories. Failure of the Company(s) to provide their records and these test wells should

result in presumptive closure of the site. In the event that this is not possible, the necessary drilling and temporary casing of the holes for sampling would be relatively inexpensive ($150 - $200) per hole, and could be constructed by this Agency subject to the legality of such investigational procedures. Surely refusal to allow such investigative procedure should be presumptive evidence sufficient for closure of the site.

C. E. Clark, Manager
Division of Land Pollution Control

Vertical Section showing flow pattern to Ranney Collector